



Answers to important questions about the new, cleaner-burning diesel fuel, engines and vehicles.

ULTRA-LOW SULFUR
HIGHWAY DIESEL FUEL
(15 ppm Sulfur Maximum)

Required for use in all model year 2007 and later highway diesel vehicles and engines.

LOW SULFUR
HIGHWAY DIESEL FUEL
(500 ppm Sulfur Maximum)

WARNING: Federal law prohibits use in model year 2007 and later highway vehicles and engines. Damage these vehicles and engines.

NON-HIGHWAY
DIESEL FUEL
(May Exceed 500 ppm Sulfur)

WARNING: Federal law prohibits use in highway vehicles or engines. Its use may damage these vehicles and engines.

One convenient web site can help answer your questions on the new Ultra Low Sulfur Diesel fuel.

visit www.clean-diesel.org

For more information, including guidelines on using biodiesel-ULSD fuel blends and more, along with links to other informational sites, log on today.

Government – Industry – Consumers
Clean Diesel Fuel Alliance
INFORMATION CENTER

New Ultra Low Sulfur Diesel fuel and new engines and vehicles with advanced emissions control systems offer significant air quality improvement.

The U.S. Environmental Protection Agency (EPA) has issued new standards to improve air quality.

To meet EPA standards, the petroleum industry is producing Ultra Low Sulfur Diesel (ULSD) fuel, a cleaner-burning diesel fuel containing a maximum 15 parts-per-million (ppm) sulfur. By June 1, 2006, 80 percent of the highway diesel fuel produced or imported will be ULSD fuel, replacing most Low Sulfur Diesel fuel which contains up to a maximum of 500 ppm sulfur.

In combination with cleaner-burning diesel engines and vehicles, ULSD fuel will help to improve air quality by significantly reducing emissions.

Diesel-powered engines and vehicles for the 2007 and later model year are designed with advanced emissions control systems and to operate only with ULSD fuel.

ULSD fuel will be the dominant diesel fuel produced after June 1, 2006.

The new EPA requirements for highway diesel fuel will be predominantly implemented by mid-2006.

- By June 1, 2006, refiners and importers nationwide must ensure that at least 80 percent of the volume of the highway diesel fuel they produce or import is ULSD-compliant.
- Diesel fuel classified as ULSD must reach distribution and marketing points downstream from refineries (i.e., pipelines, distributors, terminals and transporters) by September 1, 2006 (July 15, 2006 in California).
- ULSD fuel is expected to be available at many retail locations by October 15, 2006 (September 1, 2006 in California).
- Diesel fuel classified as Low Sulfur Diesel may still be sold at retail locations outside of California between October 15, 2006 and December 1, 2010.

It is possible that ULSD fuel might not be available initially at every service station or truck stop and that a retailer may choose to sell Low Sulfur Diesel fuel instead of ULSD fuel.

Who	Covered Fuel	Non-road Refiners & Importers	Large Refiners & Importers	Small Refiners & Importers	Non-road, Locomotive & Marine exceptions
2014	2006	500+ ppm	500+ ppm	500+ ppm	500+ ppm
2007	2007	500 ppm	500 ppm	500 ppm	500+ ppm
2008	2008	500 ppm	500 ppm	500 ppm	500+ ppm
2009	2009	500 ppm	500 ppm	500 ppm	500+ ppm
2010	2010	15 ppm	500 ppm	500 ppm	500 ppm
2011	2011	15 ppm	500 ppm	500 ppm	500 ppm
2012	2012	15 ppm	500 ppm	500 ppm	500 ppm
2013	2013	15 ppm	500 ppm	500 ppm	500 ppm
2014	2014	15 ppm	500 ppm	500 ppm	500 ppm

Non-Road Diesel Fuel Standards

EPA fuel standards for locomotive, marine and non-road diesel engines and equipment, such as farm or construction equipment, will become effective at dates later than those for highway vehicles. California is an early adopter of the new fuel and engine technologies. In California, 100 percent of the diesel sold – downstream from refineries, up to and including fuel terminals that store diesel fuel – must be ULSD fuel by July 15, 2006. And, all diesel fuel offered for sale at retail outlets must be ULSD by September 1, 2006.

Who	What	Refiners & Importers	Downstream from Refineries through Fuel Terminals	Retail Outlets
California	U.S.	Import/produce at least 80% ULSD for on highway use	Facilities that choose to carry ULSD must meet 15 ppm sulfur specification	Facilities that choose to carry ULSD must meet 15 ppm sulfur specification
		6/1/06	9/1/06	10/15/06
		6/1/10	10/1/10	12/1/10
		6/1/06	7/15/06	9/1/06

Effective Dates for Highway ULSD Fuel

ULSD brochure.qxd

The new EPA standards require compliance from virtually everyone using diesel fuel and vehicles.

The full transition to ULSD is complex and involves coordination at many levels. Many public and private organizations are collaborating through the Clean Diesel Fuel Alliance to facilitate the introduction of ULSD fuel. The U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency, engine, vehicle and component manufacturers, all sectors of the petroleum industry, and fuel consumers, such as truckers, are providing comprehensive information and technical coordination.

For a complete list of participating organizations and contacts for detailed technical and implementation information regarding ULSD, visit www.clean-diesel.org.

Answers to frequently asked questions about ULSD fuel.

Q Where can I purchase ULSD fuel?

A Although ULSD fuel will be the dominant highway diesel fuel produced, EPA does not require service stations and truck stops to sell ULSD fuel. Therefore, it is possible that ULSD fuel might not be available initially at every service station or truck stop and that a diesel retailer may choose to sell Low Sulfur Diesel fuel instead of ULSD fuel. The industries involved in the transition are doing all they can to minimize potential inconveniences during the conversion to the new diesel fuel.

Q May I continue to purchase Low Sulfur Diesel fuel if I prefer to use it in my older vehicle?

A Owners of 2007 and later model year diesel-powered highway vehicles must refuel only with ULSD fuel. Owners of 2006 and earlier model year diesel-powered engines and vehicles may use ULSD or Low Sulfur Diesel fuel during the transition period. Only ULSD fuel will be available for highway use starting on December 1, 2010.

Q How will I know which pump is dispensing ULSD fuel?

A Federal regulations require the labeling of all diesel fuel pumps to specify the type of fuel dispensed by each pump. Similar instrument panel and fuel inlet/fill cap labeling is being mandated for 2007 and later model year engines and vehicles that require ULSD fuel. Consumers are advised to check the pump labels (http://www.clean-diesel.org/images/diesel_pump_labels.pdf) and vehicle labels to ensure they are refueling with the proper diesel fuel consistent with their vehicle warranties.

Q How will ULSD fuel affect air quality?

A ULSD fuel will enable the use of cleaner technology diesel engines and vehicles with advanced emissions control devices, resulting in significantly improved air quality. Annual emission reductions will be equivalent to removing the pollution from more than 90 percent of today's trucks and buses, when the current heavy-duty vehicle fleet has been completely replaced in 2030.

Q May I continue to blend No. 1 diesel (kerosene) with my diesel fuel to improve cold weather performance?

A Only ultra low sulfur kerosene (No. 1 diesel with no more than 15 ppm sulfur) may be blended with ULSD fuel to improve cold weather performance. With so many kerosene formulations on the market, care must be taken to select kerosene with a maximum of 15 ppm sulfur. Blend rates will remain the same as with Low Sulfur Diesel fuel.

Q Will ULSD fuel be more expensive than the current Low Sulfur Diesel fuel?

A ULSD fuel costs more to refine and distribute than Low Sulfur Diesel fuel. No one can predict with certainty the price of ULSD fuel at the pump. Many factors affect the consumer price of fuels, including the price of crude oil on the global market, geopolitical, weather, transportation and economic events, as well as supply and demand. Visit the Energy Information Administration web site for more information on fuel prices at: <http://tonto.eia.doe.gov/oog/info/gdu/gasdiesel.asp>.



Q How will ULSD fuel affect the power and fuel economy of existing diesel cars, trucks and non-road engines and equipment?

A Under typical operating conditions, there should be no noticeable impact on overall power using ULSD fuel. Fuel economy may be reduced slightly because the process that removes sulfur also can reduce the energy content of the fuel.

Q Will ULSD fuel affect the performance of my vehicle?

A Engine and vehicle manufacturers expect ULSD fuel to be fully compatible with the existing fleet, including 2006 and earlier model year vehicles. In some instances, the introduction of ULSD fuel to older vehicles may affect fuel system components or loosen deposits in fuel tanks. As part of a good maintenance program, owners and operators of existing cars, trucks and buses are encouraged to monitor their diesel-powered vehicles closely for potential fuel system leaks or premature fuel filter plugging during the change-over to ULSD fuel.

Q Can Low Sulfur Diesel fuel be burned without operational problems in 2007 model year and later cars and trucks?

A Diesel-powered engines for 2007 and later model year vehicles are designed to operate only with ULSD fuel. Improper fuel use will reduce the efficiency and durability of engines, permanently damage advanced emissions control systems, reduce fuel economy and possibly prevent the vehicles from running at all. Manufacturer warranties are likely to be voided by improper fuel use. Additionally, burning Low Sulfur Diesel fuel in 2007 and later model year diesel-powered cars, trucks and buses is illegal and punishable with civil penalties.

Q Will I need to put an additive in my fuel tank to replace the lubricity that was provided by the higher sulfur content?

A Like Low Sulfur Diesel fuel, ULSD fuel requires good lubricity and corrosion inhibitors to prevent unacceptable engine wear. As necessary, additives to increase lubricity and to inhibit corrosion will be added to ULSD fuel prior to its retail sale. With these additives, ULSD fuel is expected to perform as well as Low Sulfur Diesel fuel.

Q What are the penalties for failing to comply with EPA's ULSD fuel standards?

A The new standards provide strong incentives for suppliers to provide the proper ULSD fuel formulation. Civil penalties of up to \$32,500 per violation per day can be assessed for non-compliance with EPA's ULSD fuel standards, or for misrepresentation of the sulfur level of diesel fuel. For more information about ULSD fuel standards and implementation, visit: <http://www.epa.gov/otaq/diesel.htm#hd2007>.